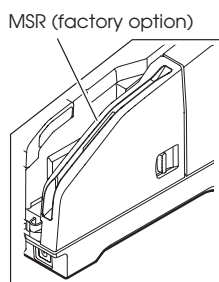
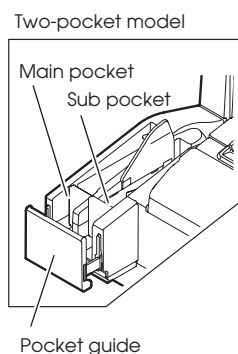
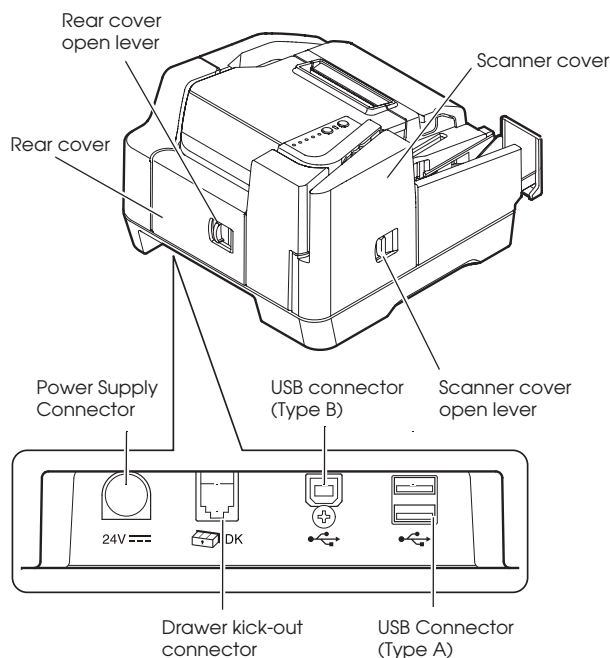
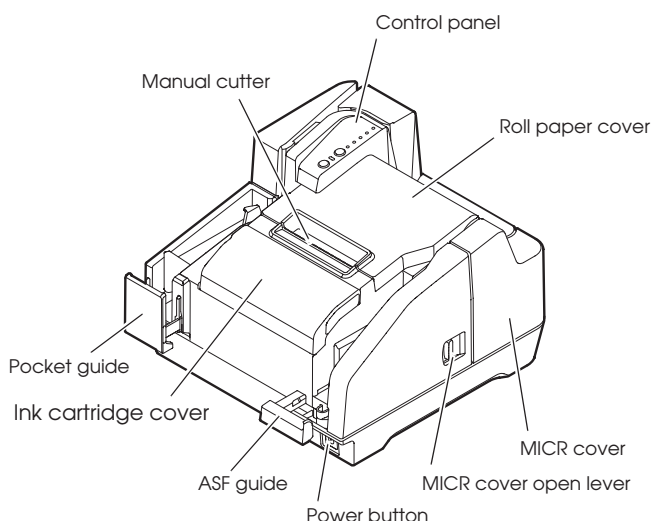


# TM-S9000 Product Information Guide

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## Accessories

| Accessory                       | Part number |
|---------------------------------|-------------|
| Ink cartridge, black (SJIC8(K)) | C33S020484  |
| Cleaning kit                    | KWEPS-KCAP1 |
| MICR cleaning sheet             | CS1B15WS    |

## Options

| Option                                                | Description                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MSR (magnetic stripe reader) unit<br>(factory option) | Two-frequency coherent phase (2F2) recognition method.<br>Reads ISO/IEC7810-compliant media.<br>Supports magnetic format ISO 7811-6, AAMVA, previous California driver's license format.<br>Bidirectional swipe direction.<br>3.94 - 39.4"/s (10 - 100 cm/s) swipe speed.<br>Built-in buzzer.<br>99.5% recognition rate. |
| USB 2.0 hub (Type A)<br>(factory option)              | Two-port USB-HUB connector.<br>High-speed = 480 Mbps theoretical value.<br>Full-speed = 12 Mbps theoretical value.<br>USB self-power function.                                                                                                                                                                           |

## Connections

| Connector       | Description                                                                         |
|-----------------|-------------------------------------------------------------------------------------|
| Power           | PS-180 Model M159B (also called Adapter J)<br>24 V $\pm$ 7%, supplied with TM-S9000 |
| Drawer kick-out | RJ12 modular connector. Connects the cash drawer                                    |
| USB 2.0         | Type B. Plug and play.                                                              |
| USB HUB         | Optional. Type A. Two-port USB HUB connector                                        |

## Drivers

| Driver                              | Functions                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EPSON TM-S9000 driver               | Use this API (Application Program Interface) to fully use functions of the TM-S9000MJ, such as the scanner function, endorsement printing function, cut sheet/roll paper printing function, and to monitor the status of the TM-S9000MJ. Programming can be done in Visual C++, Basic, or other programming languages                                                            |
| Windows printer driver for TM-S9000 | This is the standard printer driver for Windows. Printing is possible using the print function of commercially available software..                                                                                                                                                                                                                                              |
| TM Virtual Port Driver for TM-S9000 | This driver changes the interface so that a printer connected with the USB interface acts as if it is connected with the serial/parallel interface. Use this driver when you use applications that directly send control commands to printers connected with the serial/parallel interface. This driver supports the print function only. The scanner function is not available. |
| EPSON TM-S9000 TWAIN wrapper        | Use this software to control the TM-S9000MJ using TWAIN, the standard interface for scanners. Use it together with the TM-S9000 Driver.                                                                                                                                                                                                                                          |

| Driver                                 | Functions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EPSON TM-S9000 Java wrapper            | Use this software to control the TM-S9000MJ from Java applications.<br>Use it together with the TM-S9000 Driver.                                                                                                                                                                                                                                                                                                                                                                                                          |
| TM-S9000 Utility                       | Use this software to use or set the following functions of the TM-S9000.<br><input type="checkbox"/> Current Settings<br><input type="checkbox"/> Operation Check<br><input type="checkbox"/> Storing Logos<br><input type="checkbox"/> Roll paper Reduction<br><input type="checkbox"/> Automatic Paper Cut<br><input type="checkbox"/> Printing Control<br><input type="checkbox"/> Device Settings<br><input type="checkbox"/> MSR Settings (only for MSR installed models)<br><input type="checkbox"/> Backup/Restore |
| EPSON SANE for TM-S9000 for Linux      | Will support scanning, MICR reading, endorsement, and ID card scanning.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| EPSON TM-9000 Printer Driver for Linux | Will only support printing on cut sheets. Will not support scanning, MICR, endorsement, or ID cards.                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Specifications

### Computer requirements

|                  | 110-dpm model                                                | 200-dpm model                                              |
|------------------|--------------------------------------------------------------|------------------------------------------------------------|
| <b>CPU</b>       | ≥ Pentium 4, 2.0 GHz or equivalent.                          | ≥ Intel Core 2 Duo, 1.8 GHz or equivalent                  |
| <b>Memory</b>    | ≥ 512 MB, or above the minimum operating system requirement. | ≥ 1 GB, or above the minimum operating system requirement. |
| <b>HDD</b>       | ≥ 30 MB free before installation of the driver.              |                                                            |
| <b>Interface</b> | USB 2.0 Hi-speed                                             |                                                            |

### Scanning specifications

|                                 | Cut sheets                                                                                | ID cards                        |
|---------------------------------|-------------------------------------------------------------------------------------------|---------------------------------|
| <b>Resolution (dpi) (H × L)</b> | 300 × 300, 240 × 240, 200 × 200, 120 × 120, 100 × 100                                     | 600 × 600, 300 × 300, 200 × 200 |
| <b>Speed (approx.)</b>          | 31.5"/s {800 mm/s},<br>23.62"/s {600 mm/s},<br>15.75"/s {400 mm/s},<br>9.45"/s {240 mm/s} | 4.65"/s {118 mm/s}              |

Scan method Contact image sensor (CIS).  
 Gradation Binary (black and white) for cut sheets only.  
 256-level grayscale.  
 24-bit color.  
 Binary and 256-level grayscale using infrared (IR).

Data compression format JPEG (grayscale) and CCITT/Group 4 (black and white).

Data format

Black and white (driver eliminates background on checks):  
 TIFF (200 dpi, binary, CCITT/Group 4 compression complies with ANSI X9.100-181-2007) and BMP.

Grayscale: TIFF, JPEG, BMP, raster.

24-bit color TIFF, JPEG, BMP.

IR Same as black and white and grayscale.

Image size (max.) 4.32" × 10.04" {109.728 × 255 mm}

Height note 4.32" {109.728 mm} is image sensor height.

Length note 9.25" {235 mm} + margin = actual maximum length of scanned document.

Driver auto size function automatically tries to match document size to area to scan.

Auto size adjustment

Crops image and adjusts to document size, based on driver settings.

Image quality Complies with IQA (Image Quality Assurance) set by FSTC (Financial Services Technology Consortium).

Image deskewing Based on TM-S9000 driver settings.

Insertion direction and scanning process

Place side printed with magnetic ink outward with MICR ink at bottom.  
 Both sides of check are scanned.

Characters recognized by the optical character reader (OCR)

E13B, CMC7  
 OCR A, OCR B  
 Bar codes: UPC-A, UPC-E, JAN13/EAN13, JAN8/EAN8, CODE39, ITF, CODE128

OCR recognition rate

≥ 98% at 77°F {25°C} using characters conforming to ANSI standards.  
 ≥ 99% at 77°F {25°C} for bar codes.

### MICR specifications

Supported fonts E13B, CMC7  
 (Alphabetic characters not supported.)

Recognition rate ≥ 99% at 77°F {25°C} using check paper conforming to ANSI/ISO standards.  
 Checks must be flat without curls, folds, wrinkles, tears, staples, or clips.  
 TM-S9000 must not be shaken or jarred during reading.  
 Checks must be fed in straight.  
 The product should not be used near magnetic fields, such as that created by a display device.

## Media specifications

|               |                                                                                                              |
|---------------|--------------------------------------------------------------------------------------------------------------|
| Roll paper    | specified thermal paper                                                                                      |
| Take-up width | 80 + 0.5/-1.0 mm {3.15 + 0.02/- 0.04 in}                                                                     |
| Paper width   | 79.5 ± 0.5 mm {3.13 ± 0.02 in}                                                                               |
| Diameter      | 83 mm {3.27"} maximum                                                                                        |
| Core          | Inside: 12 mm {0.47"}<br>Outside: 18 mm {0.71"}<br>Width: equal to paper width or 1 mm less than paper width |

| Paper types                   | Manufacturer information                                                                                                                                                                                                                                                                                            |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specified roll paper type     | NTP080-80 (Original paper: TF50KS-E (Nippon Paper Industries Co., Ltd.))<br>In Japan: Nakagawa Manufacturing Co., Ltd.<br>In U.S.A.: Nakagawa Mfg. (USA) Inc.<br>In Europe: Nakagawa Mfg. (Europe) GmbH<br>In Southeast Asia: N.A.K. Mfg. (Malaysia) SDN BHD                                                        |
| Specified original paper type | TF50KS-E, TF60KS-E (NIPPON Paper Industries Co., Ltd.)<br>PD150R, PD160R, PD190R (OJI Paper Mfg. Co., Ltd.)<br>P220AGB-1 (Mitsubishi Paper Mills Limited.)<br>P30023, P31023, P35023 (Kanzaki specialty Papers)<br>AF50KS-E (Jujo Thermal Oy)<br>F5041 (Mitsubishi HiTec)<br>KT55F20, KT48F20 (Koehler Paper Group) |

|                 |                                           |
|-----------------|-------------------------------------------|
| Cut-sheet paper | Single ply only.                          |
| Height          | 2.36" to 4.72" {60 to 120 mm}             |
| Length          | 4.72" to 9.25" {120 to 235 mm}            |
| Thickness       | 0.003" to 0.008" {0.075 to 0.2 mm}        |
| Weight          | 16 to 32 lb {60 to 120 g/m <sup>2</sup> } |
| ID cards        | ISO/IEC7810-compliant                     |
| Height          | 2.12 to 2.13" {53.92 to 54.18 mm}         |
| Length          | 3.37 to 3.38" {85.47 to 85.90 mm}         |
| Thickness       | 0.02 to 0.033" {0.5 to 0.84 mm}           |
| Warpage         | ≤ 0.079" {2 mm}                           |
| MSR cards       | ISO/IEC7810-compliant                     |
| Height          | 2.12 to 2.13" {53.92 to 54.18 mm}         |
| Length          | 3.37 to 3.38" {85.47 to 85.90 mm}         |
| Thickness       | 0.03 to 0.033" {0.76 to 0.84 mm}          |
| Warpage         | ≤ 0.059" {1.5 mm}                         |

## Print specifications

### Roll paper printing

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Print method:        | thermal line printing                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Dot density:         | 180 dpi × 180 dpi<br>(dpi = dots per inch [25.4 mm])                                                                                                                                                                                                                                                                                                                                                                                                 |
| Print width:         | 2.83" (72 mm), 512 dots                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Characters per line: | font A: 42<br>font B: 56                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Character structure: | font A: 12 × 24 (including 2 dots)<br>font B: 9 × 17 (including 2 dots)                                                                                                                                                                                                                                                                                                                                                                              |
| Character spacing:   | 0.01" (0.28 mm), 2 dots<br>programmable by control command                                                                                                                                                                                                                                                                                                                                                                                           |
| Print direction:     | unidirectional with friction feed                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Print speeds:        | text printing (with embedded fonts):<br>11.81"/sec. [300 mm/sec.];<br>70.9 lps maximum at 1/6" feed<br>page mode printing:<br>11.81"/sec. [300 mm/sec.]<br>graphics printing (monochrome):<br>11.81"/sec. [300 mm/sec.]<br>ladder bar code, two-dimensional<br>symbol printing:<br>4.8"/sec. [124 mm/sec.]<br>graphics printing (multi-tone):<br>5.91"/sec. [155 mm/sec.]<br>(NV/download graphics);<br>2.76"/sec. [70 mm/sec.]<br>(raster graphics) |
| Paper feed speed:    | approx. 7.87"/sec. [200 mm/sec.]<br>(continuous paper feeding)                                                                                                                                                                                                                                                                                                                                                                                       |

### Cut sheet paper printing

|                 |                                                           |
|-----------------|-----------------------------------------------------------|
| Print method    | Ink-jet printed line.                                     |
| Nozzles         | 360 in 2 lines.                                           |
| Dot density     | 180 × 180 dpi.                                            |
| Print color     | Black.                                                    |
| Print direction | Fixed stroke control.                                     |
| Print height    | 2" {50.8 mm}.                                             |
| Lines printable | 12 maximum with font A.<br>16 maximum with font B.        |
| Line spacing    | 1/6" default {4.23 mm}.<br>Programmable by command.       |
| Print width     | 3.94 to 8.46" {100 to 215 mm}, depending on paper length. |

Characters per line (depending on paper length)  
 59 to 126 (Font A)  
 78 to 169 (Font B)

Character spacing  
 2 dots/0.01" {0.28 mm} for both fonts  
 Programmable by command.

Maximum print speed  
 31.50"/s {800 mm/s}  
 23.62"/s {600 mm/s}  
 15.75"/s {400 mm/s}  
 9.45"/s {240 mm/s}  
 Print speed depends on image type. You cannot print at 31.50"/s when printing an image.

### Character specifications

Alphanumeric 95 characters

Extended graphics  
 128 characters × 11 pages  
 (including user-defined page)

International 37 characters

Structure  
 Font A: 12 × 24  
 (including 2-dot horizontal spacing)  
 Font B: 9 × 17  
 (including 2-dot horizontal spacing)

### Paper feed specifications

Feed method Friction feed

Feed pitch 0.054" {0.1369 mm}

Feed speed  
 31.50"/s {800 mm/s}  
 15.75"/s {400 mm/s}  
 9.45"/s {240 mm/s}

### Auto sheet feeder (ASF)/pocket capacities

The auto sheet feeder feeds each document into the TM-S9000 and the pockets hold the processed output.

ASF capacity ≤ 100 sheets  
 (paper thickness = ≤ 0.005" {0.13 mm})  
 Total thickness of all sheets must be ≤ 0.51" {13 mm}, including uneven sheets (that were folded and straightened out, etc.).

Insert the sheets along the bottom of the ASF.

#### One-pocket model

Pocket capacity ≤ 100 sheets  
 (paper thickness = ≤ 0.005" {0.13 mm})  
 Total thickness of all sheets must be ≤ 0.51" {13 mm}, including uneven sheets (that were folded and straightened out, etc.).

#### Two-pocket model

Main pocket capacity  
 ≤ 100 sheets  
 (paper thickness = ≤ 0.005" {0.13 mm})  
 Total thickness of all sheets must be ≤ 0.51" {13 mm}, including uneven sheets (that were folded and straightened out, etc.).

Sub pocket capacity  
 ≤ 50 sheets  
 (paper thickness = ≤ 0.005" {0.13 mm})  
 Total thickness of all sheets must be ≤ 0.51" {13 mm}, including uneven sheets (that were folded and straightened out, etc.).

Paper must be flat without curls, folds, wrinkles, tears, staples, or clips. Otherwise, jams may occur.

The ASF uses a translucent photosensor. Do not use paper with holes at the sensor position. The illustration below shows where holes are prohibited.



### Reliability

#### Roll paper unit

Print head life: 150 million pulses, 150 km

Mechanism: 20 million lines

Autocutter: 2 million cuts

MTBF: 360,000 hours

MCBF: 96 million lines

#### Cut sheet unit

Print head life: 6 billion shots/nozzle

ASF: 2 million sheets

MTBF: 180,000 hours

MCBF: 4,940,000 cycles

## Electrical specifications

|                  |                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------|
| Power source:    | PS-180 Model M159B (also called Adapter J) supplied with the TM-S9000                              |
| Supply voltage:  | +24V DC $\pm 7\%$                                                                                  |
| Current usage:   | operating:<br>mean = approx. 1.2 A<br>peak = approx. 2.4 A<br><br>standby:<br>mean = approx. 0.2 A |
| Drawer kick-out: | 1 A (maximum)                                                                                      |

## Safety

|                            |                                   |
|----------------------------|-----------------------------------|
| EMI:                       | FCC/ICES-003 Class A              |
| Safety Standards:          | UL60950-1<br>CSA C22.2 No.60950-1 |
| (Tested using the PS-180.) |                                   |

## Dimensions

| One-pocket model (H $\times$ W $\times$ D)                                   | Two-pocket model (H $\times$ W $\times$ D)                                    |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 6.97" $\times$ 9.84" $\times$ 14.76"<br>{177 $\times$ 250 $\times$ 374.8 mm} | 6.97" $\times$ 10.83" $\times$ 16.13"<br>{177 $\times$ 275 $\times$ 409.8 mm} |

The dimensions above represent the depth with the pocket fully extended.

| One-pocket model         | Two-pocket model         |
|--------------------------|--------------------------|
| 11.0 lb {5.0 kg} approx. | 11.0 lb {5.0 kg} approx. |

## Environmental conditions

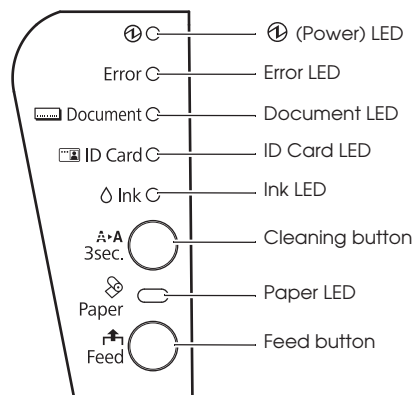
|                    |                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------|
| Temperatures:      | operating: 50 to 95° F (10 to 35° C)<br>storage: -4 to 140° F (-20 to 60° C)                     |
| Humidity:          | operating: 20 to 85% RH<br>storage:<br>5 to 85% RH (ink not loaded)<br>20 to 85% RH (ink loaded) |
| Vibration:         | 5 to 55 Hz (packed)                                                                              |
| Impact resistance: | 23.63" (packed)                                                                                  |

## Electronic Endorsement

The product can paste an electronically written image across the front or back of entire scanned image of the check or other document. The document does not need to be printed out for the endorsement to be incorporated onto the check image.

It is possible to change images one at a time. Multiple images can be pasted. Pasted images can use logos, graphics, and TrueType fonts.

## Control Panel



### LEDs

#### ① (Power) LED

Comes on when the power is on.

Flashes during some operations, such as powering on/off or charging/cleaning ink.

**Note:** Do not turn off the product or open the covers while the ① (Power) LED is flashing.

#### Error LED

Comes on when the product is offline (except during a self test or cleaning, or when feeding paper using the Feed button.)

Flashes when an error occurs.

#### Document LED

Comes on when the product is ready to process cut sheet paper in the ASF (Auto Sheet Feeder), or while the product is processing cut sheet paper.

Flashes when the product is waiting for cut sheet paper to be inserted.

#### ID Card LED

Comes on when the product is ready to process an ID Card.

Flashes when the product is waiting for an ID card to be inserted or removed.

#### Ink LED

Comes on when an ink cartridge is not installed or when it is time to replace the ink cartridge.

Flashes when ink is low.

#### Paper LED

Comes on when roll paper is low or out.

Flashes when the product is waiting for roll paper during a self-test on roll paper.

## Buttons

### *Cleaning button*

Pressing this button for three seconds or more starts print head cleaning.

**Note:** Do not clean the print head unless printing becomes faint or uneven. Unnecessarily cleaning the print head wastes ink.

### *Feed button*

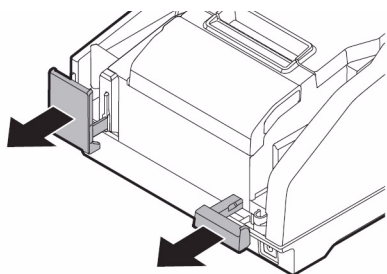
Pressing this button feeds the roll paper.

---

## Setting Up

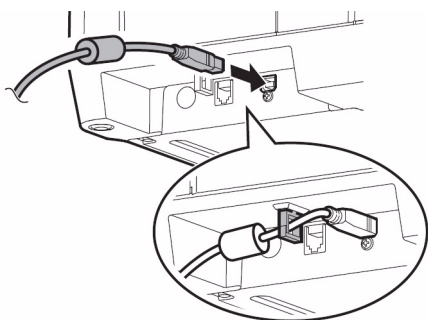
---

1. The package should contain the unit, a USB cable, an AC cable, 2 ink cartridges (SJIC18(K)), the AC adapter, a setup guide, and a user's manual.
2. Remove all packing tape, packing foam, and other shipping materials from the unit.
3. Leave enough room around the product to open the covers, pull out the ASF tray, and fully extend the pocket(s).

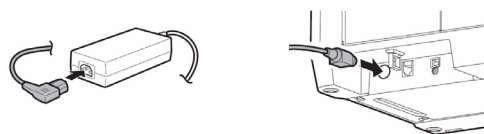


4. Do not place the unit near a magnetic field, such as a display device. (This reduces the MICR reader accuracy.)
5. Install the unit horizontally (within a tilt of  $\pm 5^\circ$ ).
6. Make sure no cords or cables are caught inside the product.
7. Connect the USB cable to the Type B connector on the product. Attach the cable with the cable harness. (See the bubble in the illustration below.)
8. Connect the USB cable to the host.

**Note:** Do not turn on the unit until you have loaded the necessary drivers.



9. Connect the AC cable to the AC adapter; then connect the adapter's DC cable to the unit's power supply connector.



10. Insert the AC cable plug into a socket.

**Caution:** Use only the specified AC adapter, and never connect to an improper power source.

11. Turn on the product by pressing the Power button on the front of the unit. To turn the unit off, hold down the Power button for 3 seconds, until the Power LED goes off.

**Caution:** Be sure the AC cable remains plugged in when powering the unit off, and always use the Power button.

---

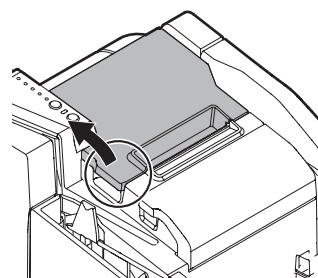
## Loading Roll Paper

---

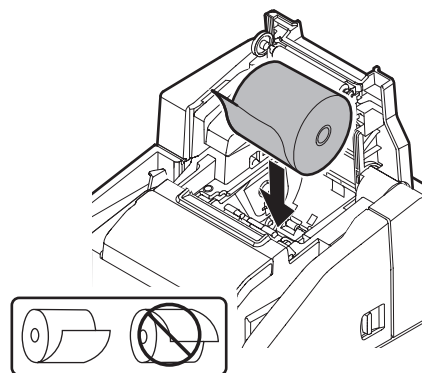
**Caution:** To avoid injury, do not touch any part of the printer other than the roll paper when the cover is open.

**Note:** Do not open the paper roll cover when the printer is printing or feeding paper. Only use paper that meets specifications, and do not use rolls that have the paper glued onto the core.

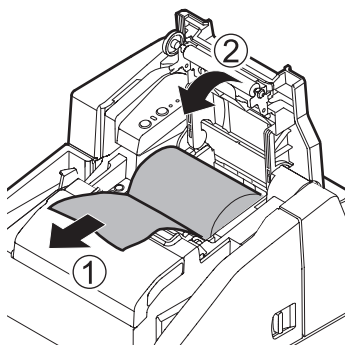
1. Put your finger under the left side of the roll paper cover and pull it up to open it.



2. Remove the used roll paper core, if there is one, and insert the roll paper in the direction shown below.



3. Pull out some paper, and close the roll paper cover.



When the power is on, the roll paper is automatically cut.

---

## Installing an Ink Cartridge

---

### Caution:

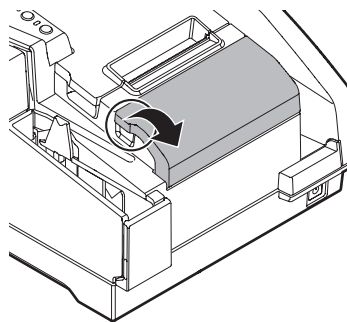
- ❑ Do not disassemble the cartridge.
- ❑ Do not refill the cartridge.
- ❑ Do not store in areas subject to high or low temperatures.
- ❑ Keep ink cartridges out of reach of children.
- ❑ Do not swallow the ink.

### Note:

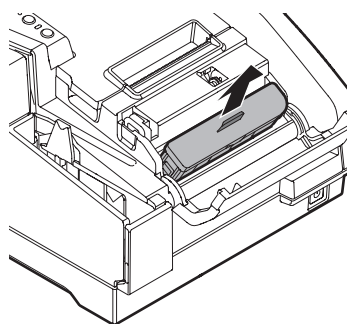
- ❑ Keep the cartridge in its package until you install it. Cartridges are good for 6 months after unpacking.
- ❑ The cartridge and its box contain the expiration date.
- ❑ Removing and reinstalling a cartridge low in ink may cause print-quality problems.
- ❑ Only remove cartridge(s) if you need to ship the printer.
- ❑ Do not puncture the convex part of a new cartridge, and do not remove the transparent film on the bottom of the cartridge. Touching the convex part of a used cartridge may stain you.
- ❑ Do not open the ink cartridge cover during printing.
- ❑ Use only Epson ink cartridges; otherwise, printer performance is not guaranteed.
- ❑ Dispose of used cartridges as industrial waste. Follow all applicable laws and regulations.

1. Turn on the product.

2. Put your finger under the left side of the ink cartridge cover and pull it up to open it.



3. Remove the ink cartridge by pulling up the tab on the top of the cartridge while holding the product.



4. Remove the new ink cartridge from its package.
5. Install the new ink cartridge in the correct direction, and push it until it clicks in place.
6. Close the ink cartridge cover.

The  (Power) LED flashes while the printer charges the ink. Charging takes a little over a minute.

**Note:** Do not turn off the product or open the covers while the  (Power) LED is flashing. This restarts the ink charging process and wastes ink.

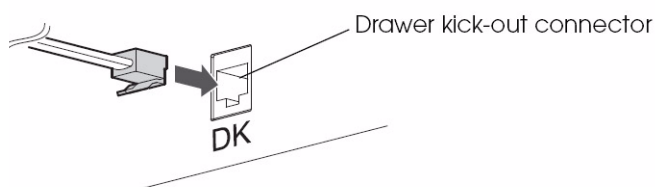
When the  (Power) LED stops flashing, the printer is ready.

---

## Connecting the Drawer Kick-out Cable

---

Connect the connector of the drawer kick-out cable to the printer.



Specifications of drawers differ depending on makers or models. When you use a drawer other than a specified model, make sure its specification meets the following conditions, otherwise, devices may be damaged.

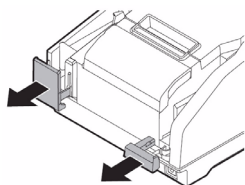
- ☐ The load, such as a drawer kick-out solenoid, must be connected between pins 4 and 2 or pins 4 and 5 of the drawer kick-out connector.
- ☐ When the drawer open/close signal is used, a switch must be provided between drawer kick-out connector pins 3 and 6.
- ☐ The resistance of the load, such as a drawer kick-out solenoid, must be 24 ohm or more or the input current must be 1A or less.
- ☐ Be sure to use the 24V power output on drawer-kick out connector pin 4 for driving the equipment.
- ☐ Use a shield cable for the drawer connector cable.
- ☐ Two driver transistors cannot be energized simultaneously.
- ☐ Leave intervals longer than 4 times the drawer driving pulse when sending it continuously.
- ☐ Be sure to use the printer power supply (connector pin 4) for the drawer power source.
- ☐ Do not insert a telephone line into the drawer kick-out connector. This may damage the telephone line or printer.

---

## Loading Sheets (Checks)

---

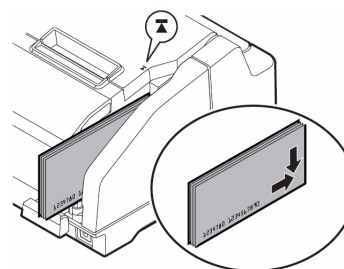
1. Fully extend the ASF and pocket guide(s). See the illustration below.



2. Make sure the Document LED is flashing.
3. You can insert single-ply paper only. You can put up to 100 checks in the ASF to be fed automatically.
4. For check scanning and MICR reading, insert checks with the MICR characters at the bottom and facing outward.

For printing, insert the sheets with the side to be printed on the inside.

5. Align sheet edges to the bottom right corner and to the paper loading mark on the right side of the cartridge cover, as shown in the callout bubble below.



6. After loading the sheets, let go of them immediately. Feeding starts automatically.

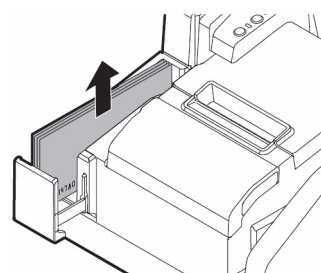
**Caution:** Do not open covers while processing is in progress.

---

## Ejecting Sheets (Checks)

---

When the checks are ejected, remove them. (For two-pocket models, paper may be ejected into the main and sub pockets separately, depending on the application.)



**Caution:** Do not overfill pockets with checks (main pocket: 100; sub pocket: 50). Otherwise, a paper jam may occur.

---

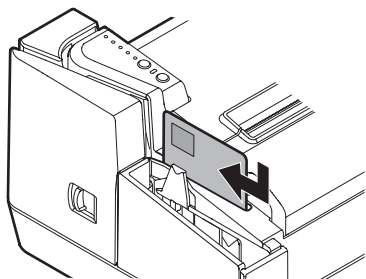
## Scanning ID Cards

---

### Note:

- ❑ Make sure that the ID card is flat and does not have excessive bending, cracks, folds, or embossing.
- ❑ Do not touch the external terminal when using an IC card.

1. Make sure the ID Card LED is flashing.
2. Put the ID card in the insertion slot on the right side of the pocket with its photo side facing the pocket, and slide it along the bottom of the slot.



3. When the ID card starts feeding, release it immediately.

### Caution:

- ❑ When the ID card is feeding, a part of it comes out of the card carrier slit at the back of the product. Be sure not to block this slit.
  - ❑ Do not touch the ID card as it is being ejected. Doing so may distort the image or cause other problems.
  - ❑ Do not open the covers while processing is in progress.
4. When the ID card is ejected and the ID Card LED flashes, remove the ID card.

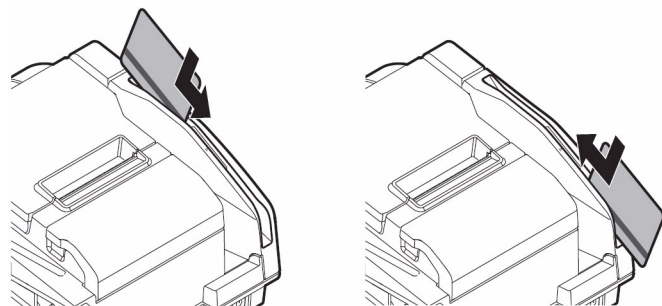
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## Reading Magnetic Stripe Cards (Factory Option)

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**Note:** Cards must match those listed under “Media Specifications.”

1. Check the insertion direction with the arrow on the card.
2. Swipe it downward or upward through the slot with the magnetic stripe on the card facing inside and down.



3. The buzzer beeps 1 time when the read is successful and 3 times for an error.

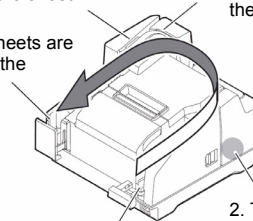
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## Check Flow Process

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The TM-S9000 processes checks in the following order:

4. The scanner section scans both sides of the sheet.
3. The printer section prints on the paper.
5. The processed sheets are then ejected into the pocket.
1. Sheets (checks) are loaded into the ASF.
2. The MICR reader section reads the magnetic characters on the check.



---

## Cleaning the Case

---

1. Turn off the product by holding the **Power** button down for 3 seconds. After the Power light goes out, unplug the AC cord.
2. Wipe dirt off the case with a dry cloth or a slightly moistened cloth.

**Caution:** Never use alcohol, benzine, thinner, or any other solvents. Doing so may damage or break parts made of plastic or rubber.

---

## Cleaning the Print Head

---

When print becomes faint or uneven, but the Ink LED is not flashing, the print head may need to be cleaned.

1. Press and hold down the **Cleaning** button for 3 seconds.
2. During cleaning, the Power LED flashes. When cleaning is complete, the light is steady.

**Note:** Cleaning nozzles uses ink, so do not clean unless necessary. Do not power the unit off or open a cover during cleaning.

---

## Cleaning the MICR Unit

---

Dirt or dust on the MICR unit can increase errors in reading magnetic characters. Clean the MICR unit every 6 months or 100,000 passes.

Use KIC Team, Inc., Waffletechnology® MICR cleaning cards.

**Note:** Discard the cleaning sheet after one use.

For the best reading results, clean the MICR reader once a week or after 2000 sheets.

It is recommended to clean the scanner after cleaning the MICR reader.

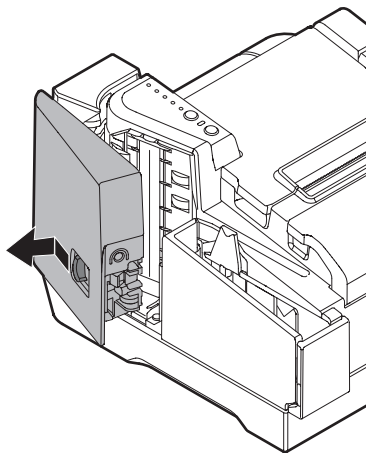
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## Cleaning the Scanner Glass

---

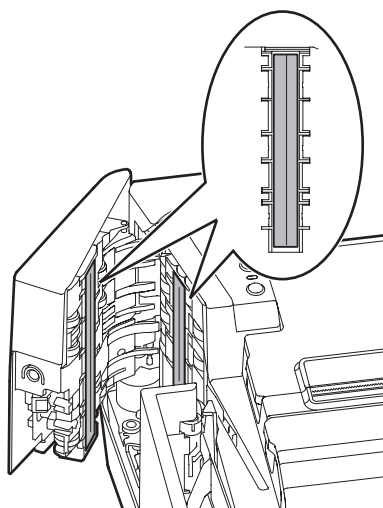
Clean the scanner once every six months.

1. Pull the scanner cover open lever and open the scanner cover by pulling it outward.



2. Lightly wipe the two glass areas with a soft, dry cloth.

**Caution:** To prevent spots or stains, do not use synthetic detergent, benzene, water, or other liquids to clean. Never apply any liquid directly to the scanner glass.



3. If the scanner glass is smeared with grease, oil, ink, etc., wipe the glass with a cloth lightly dipped in alcohol.
4. Close the scanner cover firmly until it clicks in place.

---

## Transporting the TM-S9000

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Follow the steps below to transport the product.

1. Once an ink cartridge has been installed in the unit, transport the product with the ink cartridge installed.

As shown below, tape over the holes in the cartridge to prevent any leakage.



2. Turn off the unit.
3. Confirm that the Power LED is off.
4. Remove the power supply connector.
5. Store pocket guide and the ASF guide inside the product.
6. Pack the unit upright.

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## Troubleshooting

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If control panel lights are on or flashing, read the information in the tables under “Error and Information Codes,” below.

If paper or an ID card is jammed, follow the instructions under “Clearing a Jam,” below.

If MICR cannot be read properly, follow the instructions under “Cleaning the MICR Unit,” above.

If scanned data is not normal, follow the instructions under “Cleaning the Scanner Glass,” above.

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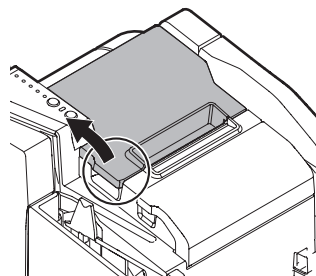
## Clearing a Jam

---

### Roll paper

**Caution:** Do not touch the thermal head, because it can be very hot after printing. Let it cool before you remove the jammed paper.

1. Turn off the product.
2. Put your finger under the left side of the roll paper cover and pull it up to open it.

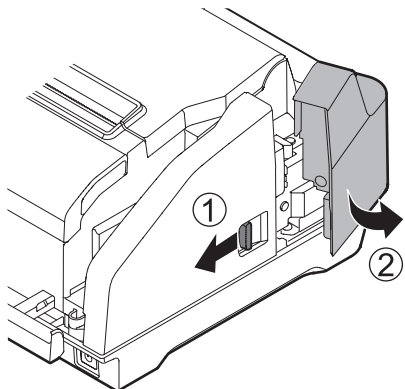


3. Remove the jammed paper.
4. Close the roll paper cover.

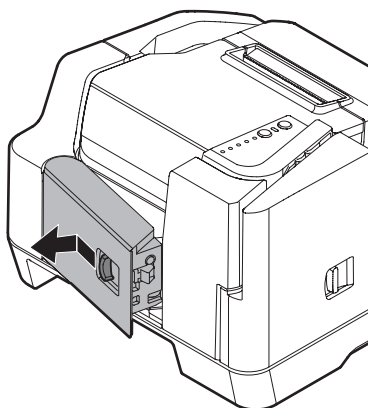
## Cut sheet paper

Depending on where the paper is jammed, open the MICR cover, rear cover, or scanner cover, and remove the jammed paper.

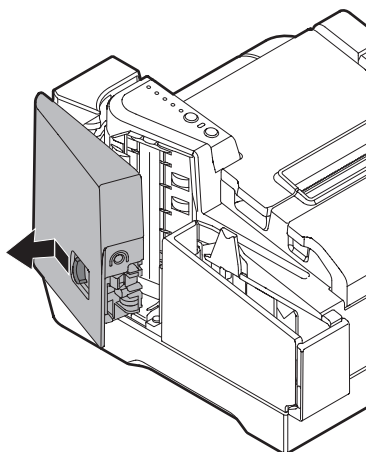
To open the MICR cover, pull the MICR cover open lever and open the MICR cover by pulling it outward.



To open the rear cover, pull the rear cover open lever and open the rear cover by pulling it outward.

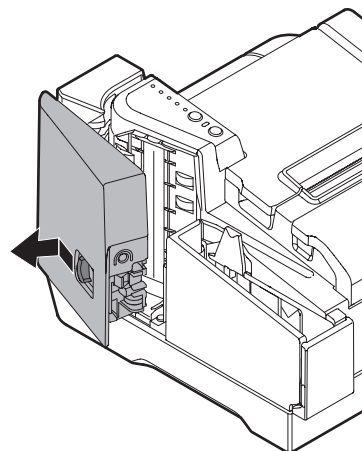


To open the scanner cover, pull the scanner cover open lever and open the scanner cover by pulling it outward.



## ID card

1. Pull the scanner cover open lever and open the scanner cover by pulling it outward.



2. Remove the jammed ID card.
3. Close the scanner cover firmly until it clicks in place.

---

## Self-Test

---

### Note:

- ☐ Before you begin, make sure all the covers are closed.
- ☐ The nozzle check pattern is only printed on cut sheet paper.
- ☐ Paper for the self-test must be cut sheets of  $\geq 2.76 \times 5.98$ " ( $\geq 70 \times 152$  mm)

The self-test checks the following functions:

- ☐ Control circuit functions
- ☐ Product mechanisms
- ☐ Print quality
- ☐ Control software version
- ☐ Memory switch settings

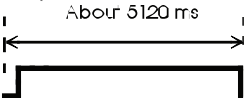
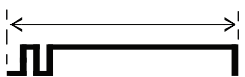
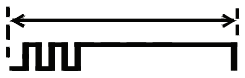
## Printing on roll paper

1. Hold down the Feed button while turning on the product.
2. After the product prints and the Paper LED begins flashing, turn off the product to exit test printing, or press the Feed button again to restart the test print. The printer will print "\*\*\* completed\*\*\*" when the test is finished.

## Printing on cut sheet paper

1. Hold down the Cleaning button while turning on the product.
2. When the Document LED flashes, insert three pieces of cut sheet paper in the ASF. The printer will print "\*\*\* completed\*\*\*" when the test is finished.

## Error LED Codes

| LED Pattern                                                                                                                          | Solution                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Roll paper cover open error (auto)<br>              | Close roll paper cover or ink cartridge cover. Check for a paper jam. Printer recovers automatically if error is fixed. If problem continues, contact your servicer.     |
| Head high/low temperature error (auto)<br>          | After continuous use, head may heat up. Wait for it to cool down. Printer recovers automatically if error is fixed. If problem continues, contact your servicer.         |
| Carriage home position error<br>                    | Check for paper jam or obstruction (paper clip, etc.). Check for dirt on the home position (HP) sensor. If problem continues, contact the servicer.                      |
| Cut sheet paper ejection error<br>                  | Look into printer from the top and left to check for a paper jam. Check ASF. Remove paper. If problem continues, contact your servicer.                                  |
| Sheet feed error<br>                                | Look into printer from the top and left to check for a paper jam. Check card feeder. Check ASF. Remove paper. If problem continues, contact your servicer.               |
| Roll paper cover open error (command recovery)<br> | Close roll paper cover or ink cartridge cover. Check for a paper jam. Fix error and send a recovery command to the printer. If problem continues, contact your servicer. |
| Drive circuit error<br>                           | The drive circuit, thermistor, pump driver, or image scanner sensor may have a problem. Contact your servicer.                                                           |
| Read/write error<br>                              | Problem with read/write memory. Contact your servicer.                                                                                                                   |
| High voltage error<br>                            | Use an Epson power supply. Try using a new power supply. If problem continues, contact your servicer.                                                                    |
| Low voltage error<br>                             | Use an Epson power supply. Try using a new power supply. If problem continues, contact your servicer.                                                                    |
| CPU error<br>                                     | Main board error. Try turning printer off and back on. If problem continues, contact your servicer.                                                                      |

## Maintenance Counters

| Counter                                     | Counter type          | Unit       |
|---------------------------------------------|-----------------------|------------|
| Number of lines fed for roll paper          | Resettable/Cumulative | Lines      |
| Count of thermal head energizing            | Resettable/Cumulative | Count      |
| Number of lines fed for thermal head        | Resettable/Cumulative | Lines      |
| Number of head shots for ink jet (Column A) | Resettable/Cumulative | 1000 shots |
| Number of head shots for ink jet (Column B) | Resettable/Cumulative | 1000 shots |
| Count of pump motor operations              | Resettable/Cumulative | Count      |
| Count of autocutter drive                   | Resettable/Cumulative | Count      |
| Count of ASF feeding                        | Resettable/Cumulative | Count      |
| Count of cut sheet paper scanning           | Resettable/Cumulative | Count      |
| Count of card scanning                      | Resettable/Cumulative | Count      |
| Count of magnetic ink character read        | Resettable/Cumulative | Count      |
| Count of pocket switch                      | Resettable/Cumulative | Count      |
| Count of hopper open/close                  | Resettable/Cumulative | Count      |
| Duration of product operation               | Resettable/Cumulative | Hours      |

## NV Memory

The TM-S9000 has an NV (nonvolatile) graphics memory area for registering logos and other images and a users NV memory area for storing text data to be used multiple times and for storing information on customizing and maintenance.

Storing graphics requires the TM-S9000 Utility, which is described in the *TM-S9000 Utility User's Manual*.

The user also can create a user-defined page to print characters not resident in the printer.

## Memory Switches

The following settings can be set using the Memory Switch Setting mode. You can use the TM-S9000 Utility to set additional settings. See the *TM-S9000 Utility User's Manual* for more information.

| Setting                               | Function                                                    |
|---------------------------------------|-------------------------------------------------------------|
| Power on information                  | Do not transmit (Initial value)<br>Transmit                 |
| Auto line feed                        | Always disabled (Initial value)<br>Always enabled           |
| Remote wake-up                        | Enabled (Initial value)<br>Disabled                         |
| Roll paper cover open during printing | Auto recoverable error (Initial value)<br>Recoverable error |

| Setting                        | Function                                                                                                                                                                                                                                                                                |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Print density (roll paper)     | Selectable from levels 1 to 13 (70-130%)<br>Initial setting: 7                                                                                                                                                                                                                          |
| Cut paper when cover is closed | Enabled (Initial value)<br>Disabled (not recommended)                                                                                                                                                                                                                                   |
| Roll paper reduction settings  | (italized setting is initial setting)<br>Extra Upper Space Reduction - <i>Disable/Enable</i><br>Extra Lower Space Reduction - <i>Disable/Enable</i><br>Line Space Reduction Rate - 0/25/50/75%<br>Line Feed Reduction Rate - 0/25/50/75%<br>Barcode Height Reduction Rate - 0/25/50/75% |
| Multi-tone print density       | Selectable from levels 1 to 13 (70-130%)<br>Initial setting: 7                                                                                                                                                                                                                          |

## Sensors

The scanner has the following sensors.

| Sensor                     | Function                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Paper Sensors</b>       |                                                                                                                                                                                                                                                                                                                                           |
| ASF sensor                 | Located in the feeder paper path. When this sensor detects paper, the unit turns on the Document LED.                                                                                                                                                                                                                                     |
| Paper length sensor        | Located in the cut-sheet paper path. Used for jam detection if paper remains in the path and for internal processing.                                                                                                                                                                                                                     |
| Middle sensor              | Located in the cut-sheet paper path. Used for jam detection if paper remains in the path and for internal processing.                                                                                                                                                                                                                     |
| Eject sensor               | Located in the cut-sheet paper path. This sensor detects whether paper has been ejected properly and stored in the pocket(s).                                                                                                                                                                                                             |
| Pocket near full sensors   | These sensors are present only in two-pocket models. One sensor is in the main pocket, and one is in the sub pocket. They detect whether the sheets in the pockets need to be removed.                                                                                                                                                    |
| ID card sensor             | Located in the card path. This sensor detects whether a card is inserted or removed. Based on the sensor status, the ID Card Indicator comes on, turns off, or flashes.                                                                                                                                                                   |
| Sensor                     | Function                                                                                                                                                                                                                                                                                                                                  |
| <b>Cover sensors</b>       |                                                                                                                                                                                                                                                                                                                                           |
| Ink cartridge cover sensor | Monitors whether the cover is open or closed. If the sensor detects a cover open, processing stops immediately and the unit goes offline. When the cover is closed, the unit goes back online. Opening a cover during processing (MICR reading, scanning, etc.) affects the quality of the result, and the process may need to be redone. |
| MICR cover sensor          | Monitors whether the cover is open or closed. If the sensor detects a cover open, processing stops immediately and the unit goes offline. When the cover is closed, the unit goes back online. Opening a cover during processing (MICR reading, scanning, etc.) affects the quality of the result, and the process may need to be redone. |
| Scanner cover sensor       | Monitors whether the cover is open or closed. If the sensor detects a cover open, processing stops immediately and the unit goes offline. When the cover is closed, the unit goes back online. Opening a cover during processing (MICR reading, scanning, etc.) affects the quality of the result, and the process may need to be redone. |
| <b>Other sensors</b>       |                                                                                                                                                                                                                                                                                                                                           |

| Sensor                   | Function                                                                                                                                                                                                                                 |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pocket sensors           | These sensors are only on two-pocket models. They are located on the switch board that determines which pocket receives the ejected sheet. There is another sensor that keeps track of the current switch board position.                |
| ASF hopper sensor        | This sensor detects the position of the hopper that holds sheets in the ASF.                                                                                                                                                             |
| <b>Cartridge sensors</b> |                                                                                                                                                                                                                                          |
| Cartridge sensor         | Detects whether the ink cartridge is installed or not. If no cartridge is detected, the Ink and Error lights both come on.                                                                                                               |
| Ink low sensor           | This sensor detects when the cartridge becomes low and when it is out of ink. When ink is low, the Ink LED flashes. When the cartridge is out of ink, the Ink light becomes steady, the Error light comes on, and the unit goes offline. |

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